Attachment: F
July 11, 2007 PDC Minutes

BLS Curriculum Review Committee Presentation

Course Design

- added to current curriculum
- taught over the entire class
- multiple exposure vs. single modular class after regular course

Module Additions

Module 2 Airway

Lesson 2-1A Adjusted dose oxygen

Lesson 2-1B Tracheostomy Management

Module 4 Medical Emergencies

Lesson 4-2A Respiratory Emergencies

- Adjusted dose oxygen
- Pulse Oximetry
- Medication: Beta 2 Agonist HHN
- Medication: Atrovent HHN
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Lesson 4-3A Cardiovascular Emergencies

- Medication: Aspirin PO
- Medication: Nitroglycerin (ambulance supply) SL
- Medication: Nitorglycerin Topical Paste

Lesson 4-4A Diabetes/Altered Mental Status

- Glucometry
- Medication: Glucagon IM

Lesson 4-5A Allergies

- Medication: Non-prescribed Auto Injector
- Medication: Epinepherine 1:1000 SC
- Medication: Beta 2 Agonist HHN

Module 8 Advanced Airway

Lesson 8-4 Advanced Airway Management I (optional)

- Dual Lumen Device (Combitube)

Lesson 8-5 Practical Skills Lab Advanced Airway (Combitube)

- Dual Lumen Device (Combitube)

Lesson 8-4 Advanced Airway Management II (optional)

- King-LT Airway

Lesson 8-5 Practical Skills Lab Advanced Airway II King -LT

- King-LT Airway

TRACHEOSTOMY MANAGEMENT SKILL SHEET

Candidate: _____ Examiner: _____ Date: _____

Note: If candidate elects to initially ventilate with BVM attached to reservoir and oxygen, full credit must be awarded for steps denoted by "" so long as first ventilation is delivered within 30 seconds.**

Column A = Procedure Check List, Column B = Skills Evaluation

Desired Action or Procedure **Suctioning**	**Points**	**A**	**B**
Takes or verbalizes body substance isolation procedures	**1**		
Preoxygenate	**1**		
Select aprpriate sized flexible catheter	**1**		
Inject 3 cc sterile saline down trachea	**1**		
Instruct patient to exhale	**1**		
Insert suction catheter until resistance detected	**1**		
Instruct patient to cough or exhale	**1**		
Suction during withdrawal	**1**		
Passing Score: 6 points **Total:**	**8**		

NOTE: Examiner states:"You are unable to clear the airway with suctioning. Please replace the trachostomy tube."

Tracheostomy Tube replacement	**Points**	**A**	**B**
Directs assistant to preoxygenate patient	**1**		
Selects apropriate size tracheostomy tube	**1**		
Checks/prepares airway device (inserts obturator, removes inner cannula)	**1**		
Lubricates distal tip of the device [may be verbalized]	**1**		
Positions head properly	**1**		
Deflates distal cuff if present	**(1)**		
Removes existing obstructed device			
Applies gentle traction to next to expose stoma	**1**		
Inserts device following the anatomy of the airway	**1**		
Inflates distal cuff with proper volume if present and removes syringe	**(1)**		
Attaches/directs attachment of BVM to the device and ventilates (using inner cannula if present)	**1**		
Confirms placement and ventilation through correct lumen by observing chest rise, auscultation over the epigastrium, and bilaterally over each lung	**1**		
Ensures a false lumen has not been created	**1**		
Passing Score: 8 points **Total:**	**10 (12)**		

Critical Criteria

_____ Failure to voice and ultimately provide high oxygen concentrations.
_____ Ventilates patient at a rate greater than 12 breaths per minute.
_____ Failure to provide adequate volumes per breath [maximum 2 errors/minute permissible].
_____ Failure to insert the tracheostomy tube device properly within 2 attempts.
_____ Failure to inflate distal cuff if present .
_____ Failure to remove the syringe immediately after inflation of distal cuff if present.
_____ Failure to confirm proper positioning of the device by observing chest rise, auscultation over the epigastrium, and bilaterally over each lung during ventilation.
_____ Inserts any adjunct in a manner dangerous to patient.

OBJECTIVES

Objectives Legend
C = Cognitive P = Psychomotor A = Affective
1 = Knowledge level
2 = Application Level
3 = Problem-solving level

COGNITIVE OBJECTIVES

1. List the steps in performing the actions taken when providing mouth to-mouth and mouth-to-stoma artificial ventilation.(C-1)
2. List and describe common causes of stoma obstruction (C-1)
3. Describe the techniques of suctioning laryngectomies (stomas) (C-1)
4. Describe the techniques of suctioning traheostomy tubes (C-1)
5. List the steps and describe the cleaning and replacing traheostomy tubes (C-1)

AFFECTIVE OBJECTIVES

1. Define, identify and describe a tracheostomy, stoma, and tracheostomy tube. (C-1)
2. Define, identify, and describe a laryngectomy. (C-1)
3. Define how to ventilate with a patient with a stoma, including mouth-to-stoma and bag-valve-mask-to-stoma ventilation. (C-1)
4. Demonstrate how to artificially ventilate a patient with a stoma.(P 1,2)
5. Demonstrate the techniques and steps of suctioning laryngectomies (stomas). (P-1,2)
6. Demonstrate the techniques and steps of suctioning traheostomy tubes (P-1,2)\
7. Demonstrate the techniques and steps of cleaning and replacing traheostomy tubes (P-1,2)

PSYCHOMOTOR OBJECTIVES

1. Defend oxygenation and ventilation. (A-1)
2. Defend the necessity of establishing and/ or maintaining patency of a patient's airway. (A-1)
3. Comply with standard precautions to defend against infectious and communicable diseases. (A-1)

PREPARATION

Motivation: Accurate assessment and management of the airway is critical to survival of illness and injury. It is the first assessment and treatment in basic and advanced life support.

Patients with laryngectomies (stomas) and tracheostomy tubes are becoming a more prevalent patient population for the EMS community. As our exposure to these patients increases so does the potential for problems relating to airway management.

Tracheostomy patients and their care providers are trained in the day to day care of their airways. If an emergency situation should develop the EMT-Basic should have a rudimentary knowledge of how to maintain a patient airway in this patient population.

Prerequisites: BLS, Preparatory, Airway, Patient Assessment, History and Physical Exam for Medical and Trauma Patients, Infants and Children

MATERIALS

AV Equipment: The Virginia Office of EMS Currently provides AV aids for the infants and children curriculum. The EMSAT Instructor Edition: Children with Special Needs video gives visual and auditory demonstrations of multiple children with tracheal tube management problems.

Utilize various audio-visual materials relating to tracheostomy management. The continuous design and development of new audio-visual materials relating to EMS requires careful review to determine which best meets the needs of the program. Materials should be edited to assure the objectives of the curriculum are met.

EMS Equipment: Manikin with a simulated stoma that can accept the insertion of a tracheostomy tube (the manikin need not have chest rise and fall with ventilation), various tracheostomy tube sizes, various suction catheters, simulated sterile water, stethoscope, BVM

PERSONNEL

Primary Instructor: One EMT-Basic instructor knowledgeable in tracheostomy management

Assistant Instructor: The instructor-to-student ratio should be 1:6 for psychomotor skill practice. Individuals used as assistant instructors should be knowledgeable in tracheostomy management

Recommended Minimum Time to complete: An Additional 15 minutes should be devoted to didactic instruction
An Additional 45 minutes should be allotted for practical instruction and skill evaluation

PRESENTATION

Declarative (What)

I. Terminology
   a. Tracheostomy
      i. Surgical opening into trachea
      ii. Done in operating room under controlled conditions
      iii. A stoma located just superior to the suprasternal notch
      iv. A tube fits within stoma to ensure a patent airway
   b. Stoma
      i. Resultant orifice connecting trachea to outside air
      ii. Patient now breathes through this surgical opening
   c. Laryngectomy
      i. Surgical procedure to remove part or entire larynx
      ii. A stoma is created to allow the patient to breathe
      iii. Some patients have partial laryngectomies. If, upon artificially ventilating stoma, air escapes from the mouth or nose, close the mouth and pinch the nostrils.

II. Complications
   a. Mucous plug
      i. Laryngectomees possess less efficient cough
      ii. Mucous commonly obstructs tubes
         1. If it is obstructed, suction it.
      iii. Tube may be removed/ cleaned and replaced
   b. Stenosis
      i. Stoma spontaneously narrows
      ii. Potentially life-threatening
      iii. Soft tissue swelling decreases stoma diameter
      iv. Trach tube is difficult or impossible to replace

III. Emergency Management
   a. Suctioning
      i. Procedure
         1. Select apropriate sized french suction catheter
         2. Preoxygenate
         3. Inject 3 cc sterile saline down trachea
         4. Instruct patient to exhale
         5. Insert suction catheter until resistance detected
         6. Instruct patient to cough or exhale
         7. Suction during withdrawal
   b. Tube Replacement
      i. Indication
         1. if suctioning fails to clear an obstructed tube it may be necessary to replace the device.

ii. Procedure
    1. Select apropriate size catheter (same size as original catheter)
        a. In some cases of stenosis a smaller sized catherter must be used.
    2. Position the patient's head in a neutral position
    3. Remove existing tube
    4. Apply gentle traction below stoma
    5. Insert replacement tube following the anatomy of the airway
    6. Assure a false lumen has not been created
    7. Secure tracheostomy tube
    8. Continue patient assessment

Procedural (How)

1. Show charts of airways in adults and children with illustrations of tracheostomy tubes and stomas.
2. Show charts of ventilating children and adults with tracheostomy tubes and stomas.
3. Show anatomical models demonstrating processes involved in tracheostomy tube management skills.
4. Demonstrate all basic skills of airway management.
5. Show all components and various sizes of a tracheostomy tube.
6. Demonstrate selection of appropriate suction catheter.
7. Demonstrate proper stoma and tracheostomy suctioning techniques.
8. Demonstrate techniques for selection and preparation of tracheostomy tube.
9. Demonstrate inline positioning of the patient's head.
10. Demonstrate tracheostomy tube removal and replacement.
11. Demonstrate confirmation techniques.
12. Demonstrate methods of securing the tracheostomy tube.
13. Demonstrate methods of providing artificial ventilation with a tracheostomy tube.
14. Demonstrate patient assessment techniques post-airway placement.

Contextual (When, Where, Why)

There is an increasing population of adults and children with laryngectomies (stomas) and living outside a health care setting. This module provides the EMT-B with more exposure to the complications associated with stoma and tracheostomy tube airway management. Having them able to replace obstructed tracheostomy tubes increases their ability to maintain a patent airway in this patient population

STUDENT ACTIVITIES

Auditory (Hear)

1. The student should hear the sounds associated with suctioning a stoma and a tracheostomy tube.
2. The student should hear the sounds associated with ventilating a stoma or tracheosotmy tube.
3. The student should hear the sounds associated with removing a tracheostomy tube.
4. The student should hear the associated sounds of tracheostomy tube insertion.
5. The student should hear the sounds associated with the preparation of the tracheostomy tube.
6. The student should hear lung sounds in the confirmation of the tracheostomy tube.
7. The student should hear the sounds associated with securing a tracheostomy tube.

Visual (See)

1. The student should see audio-visual aids or materials of stomas and various sizes and types of tracheostomy tube
2. The student should see examples adult patients needing stoma/tracheostomy management.
3. The student should see how to prepare the tracheostomy tube.
4. The student should see how to check the tube and cuffs prior to insertion.
5. The student should see how to insert the tracheostomy tube.
6. The student should see how to confirm placement of the tracheostomy tube.
7. The student should see how to ventilate esophageal and tracheal placement.
8. The student should see how to secure the tracheostomy tube.
9. The student should see how to continue monitoring the patient with a tracheostomy tube in place.

Kinesthetic (Do)

1. The student should practice selecting the proper suction catheter for tracheostomy/stoma suctioning.
2. The student should practice tracheostomy/stoma suctioning.
3. The student should practice selecting and preparing the tracheostomy tube.
4. The student should practice checking the tracheostomy tube and cuffs.
5. The student should practice positioning the head midline for tube insertion.
6. The student should practice removing the existing tracheostomy tube.
7. The student should practice inserting the tracheostomy tube.
8. The student should practice assessing for confirmation of tracheostomy tube placement.
9. The student should practice securing the tracheostomy tube tube.

INSTRUCTOR ACTIVITIES

EVALUATION

Written: Develop evaluation instruments, e.g., quizzes, verbal reviews, and handouts, to determine if the students have met the cognitive and affective objectives of this lesson.

Practical: Evaluate the actions of the EMT-Basic students during role play, practice or other skill stations to determine their compliance with the cognitive and affective objectives and their mastery of the psychomotor objectives of this lesson.

REMEDIATION

Identify students or groups of students who are having difficulty with this subject content. Complete remediation sheet from the instructor's course guide.

ENRICHMENT

What is unique in the local area concerning this topic? Complete enrichment sheets from instructor's guide and attach with lesson plan.

OBJECTIVES

Objectives Legend
C = Cognitive P = Psychomotor A = Affective
1 = Knowledge level
2 = Application Level
3 = Problem-solving level

COGNITIVE OBJECTIVES

1. Explain the relationship between pulmonary circulation and respiration. (C-3)
2. Describe the measurement of oxygen in the blood. (C-1)
3. List factors which cause decreased oxygen concentrations in the blood. (C-1)
4. Describe the indications for using a nasal cannula versus a nonrebreather face mask. (C-1)

AFFECTIVE OBJECTIVES

1. Defend oxygenation and ventilation. (A-1)
2. Explain the rationale for providing adequate oxygenation through high inspired oxygen concentrations to patients who, in the past, may have received low concentrations.(A-3)
3. Comply with standard precautions to defend against infectious and communicable diseases. (A-1)

PSYCHOMOTOR OBJECTIVES

1. Perform pulse oximetry. (P-2)

PREPARATION

Motivation: Many Virginia EMS Agencies currently use pulse oximetry. Many regions have protocol allowing the use of adjusted dose oxygen by nasal cannula for patients already on oxygen at home or in a health care setting.

These procedures are non-invasive, easily learned, rapidly applied and inexpensive.

Prerequisites: This should be taught along with lesson 4-2: Respiratory Emergencies

MATERIALS

AV Equipment: Utilize various audio-visual materials relating to the use of pulse oximetry. The continuous design and development of new audio-visual materials relating to EMS requires careful review to

determine which best meets the needs of the program. Materials should be edited to assure the objectives of the curriculum are met.

EMS Equipment: A pulse oximiter in addition to the equipment required for the respiratory emergencies module, lesson 4-2.

PERSONNEL

Primary Instructor: One EMT-Basic instructor knowledgeable in the use of pulse oximetry.

Assistant Instructor: The instructor-to-student ratio should be 1:6 for psychomotor skill practice. Individuals used as assistant instructors should be knowledgeable in the use of pulse oximetry.

Recommended Minimum Time to complete: This module can be taught during the respiratory emergencies module

PRESENTATION

Declarative (What)

1. Oxygen content of blood
    a. Dissolved O_2 crosses pulmonary capillary membrane and binds to hemoglobin (Hgb) of red blood cell
    b. Oxygen is carried
        i. Bound to hemoglobin
        ii. Dissolved in plasma
    c. O_2 saturation
        i. % of hemoglobin saturated
        ii. Normally 96 – 100%
2. Causes of decreased oxygen concentrations in the blood
    a. Lower partial pressure of atmospheric O_2
        i. High altitude
        ii. Carbon Monoxide
        iii. Gas Leak
    b. Lower hemoglobin levels in blood
        i. Anemia
        ii. Sickle cell disease
        iii. Hypovolemia
        iv. Shock
    c. Trauma
        i. Less surface area for gas exchange
            1. Pneumothorax
            2. Hemothorax

3. Combination of pneumothorax and hemothorax
4. Pulmonary contusions

ii. Decreased mechanical effort
1. C-spine injury
2. Rib fracture

iii. Pain
iv. Traumatic suffocation
v. Hypoventilation

d. Medical
i. Physiological barriers
1. Pneumonia
2. Pulmonary edema / Congestive Heart Failure
3. COPD
4. Muscular Disorders

3. Supplemental oxygen therapy
a. Rationale
i. Enriched O_2 atmosphere increases oxygen to cells
ii. Increasing available O_2 increases patient's ability to compensate
iii. O_2 delivery method must be reassessed to determine adequacy and efficiency

b. Delivery devices
i. Nasal cannula
1. Nasally placed O_2 catheter for oxygen enrichment
2. Optimal delivery: 40% at 6 L/ min
3. Indications
a. Low to moderate O_2 enrichment
b. Long term O_2 maintenance therapy
4. Contraindications
a. Poor respiratory effort
b. Significant hypoxia
c. Apnea
d. Mouth breathing
5. Advantage
a. Well tolerated
6. Disadvantage
a. Does not deliver high volume/ high concentration

ii. Non-rebreather mask
1. Mask with a single side port covered by one-way disc
2. Reservoir bag with one way valve attached
3. Range: 80-95+% at 15 L/ min
4. Indication
a. Delivery of highest O_2 concentration
5. Contraindications
a. Apnea
b. Poor respiratory effort

6. Advantages
    a. Highest O_2 concentration
    b. Delivers high volume/ high O_2 enrichment
    c. Patient inhales enriched O_2 from reservoir bag rather than residual air
7. Disadvantages
    a. None in the emergency setting

4. Pulse Oximetry
    a. Indications
        i. May be used with any patient experiencing dyspnea
        ii. Is used to partially evaluate a patient's response to treatment
    b. Method
        i. Place apropriate probe on patient's distal finger
        ii. Some probes are designed to attach to the patient's earlobe or toe
        iii. Check machine to ensure a strong pulse wave is being received by the probe
        iv. Pulse oximetry readings
            1. 96% - 100% relatively normal
            2. 91% - 95% indicates hypoxia
            3. 86% - 90% indicates significant hypoxia
            4. less than 86% indicates severe hypoxia
    c. Indications
        i. May be used with any patient experiencing dyspnea
    d. Advantages
        i. Easy to apply
        ii. Non-invasive
    e. Disadvantages
        i. Misleading in patients with hypovolemia or decreased hemoglobin (Hgb) count.
        ii. Poor reading in patients with hypothermia
        iii. Falsely high readings with carbon moxide inhalation as it binds to hemoglobin (Hgb)
        iv. Excessive movement may cause inaccurate readings
        v. Nail polish may cause inaccurate readings
        vi. The batteries and probe must be in good condition to obtain accurate readings.
    f. Special Considerations
        i. Pulse oximitry may be used to assist in the evaluation of a patient's response to treatment
        ii. Pulse oximetry should not replace other methods of patient assessment.
        iii. Never deprive a patient in respiratory distress from oxygen while attempting to obtain a pulse oximetry reading

Procedural (How)

1. Show examples of pulse oximetry monitoring devices
2. Demonstrate pulse oximetry placement and monitoring
3. Demonstrate pulse oximetry trouble shooting for weak monitor signals

Contextual (When, Where, Why)

If the patient has adequate breathing, the EMT-Basic must decide if oxygen is indicated. If oxygen is necessary, the EMT-Basic must select the appropriate device and follow the procedure for delivery.

Pulse oximetry allows for accurate trending of a patients condition. It is not meant to be an indicator for treatment of a patient in respiratory distress. It is a useful tool in measuring your patient's response to treatment.

STUDENT ACTIVITIES

Auditory (Hear)

1. The student should hear sounds associated with use of a pulse oximeter

Visual (See)

1. The student should see the components of a pulse oximeter
2. The student should see the proper application of a pulse oximeter

Kinesthetic (Do)

1. The student should perform pulse oximetry monitoring

INSTRUCTOR ACTIVITIES

EVALUATION

Written: Develop evaluation instruments, e.g., quizzes, verbal reviews, and handouts, to determine if the students have met the cognitive and affective objectives of this lesson.

Practical: Evaluate the actions of the EMT-Basic students during role play, practice or other skill stations to determine their compliance with the cognitive and affective objectives and their mastery of the psychomotor objectives of this lesson.

REMEDIATION

Identify students or groups of students who are having difficulty with this subject content. Complete remediation sheet from the instructor's course guide.

ENRICHMENT

What is unique in the local area concerning this topic? Complete enrichment sheets from instructor's guide and attach with lesson plan.

OBJECTIVES

Objectives Legend
C = Cognitive P = Psychomotor A = Affective
1 = Knowledge level
2 = Application Level
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COGNITIVE OBJECTIVES

1. Describe the indications, contraindications, advantages, disadvantages, complications, equipment, and technique for using a dual lumen airway. (C-3) (Optional by Region)
2. Describe the methods of assessment for confirming correct placement of a combitube. (C-1)
3. Describe methods for securing a combitube or dual lumen airway. (C-1)

AFFECTIVE OBJECTIVES

1. Defend oxygenation and ventilation. (A-1)
2. Defend the necessity of establishing and/ or maintaining patency of a patient's airway. (A-1)
3. Comply with standard precautions to defend against infectious and communicable diseases. (A-1)

PSYCHOMOTOR OBJECTIVES

1. Perform body substance isolation (BSI) procedures during basic airway management, advanced airway management, and ventilation. (P-2)
2. Insert a dual lumen airway. (P-2)
3. Perform assessment to confirm correct placement of the dual lumen airway. (P-2)
4. Adequately secure a dual lumen airway or combitube (P-1)

PREPARATION

Motivation: Accurate assessment and management of the airway is critical to survival of illness and injury. It is the first assessment and treatment in basic and advanced life support. Often the patient with airway compromise requires advanced management and the first to arrive at such crises is an EMT-Basic. The EMT-Basic is now recognized for their ability to provide care to the greatest number of patients. The management of the airway is paramount to the overall care of the patient. The use of the dual lumen airway/combitube procedures should enhance patient care and outcomes.

Many regions within Virginia currently allow rescue airway devices. Adding this module to the basic program will give the EMT-B student more exposure to advanced airway management.

EMT Basic: Virginia 2007 Curriculum Update
Module _: Airway
Lesson _-_: Dual Lumen/Combitube

Prerequisites: EMT-B NSC 1994: BLS, Preparatory and Airway Lesson 2-1.

MATERIALS

AV Equipment: Utilize various audio-visual materials relating to the Dual Lumen Airway. The continuous design and development of new audio-visual materials relating to EMS requires careful review to determine which best meets the needs of the program. Materials should be edited to assure the objectives of the curriculum are met.

EMS Equipment: Exam gloves, eye protection, basic airway adjuncts, adult intubation manikins, stethoscopes(1:6), dual lumen airway/combitube, 100 mL syringe, 15 mL syringe, lubricant, suction units, oxygen cylinders, bag-valve-mask (1:6), oxygen supply tubing, adult throat models showing anatomy to include trachea and vocal cords, face masks.

PERSONNEL

Primary Instructor: One EMT-Basic instructor knowledgeable in Airway management and the use of the dual lumen airway or Combitube.

Assistant Instructor: The instructor-to-student ratio should be 1:6 for psychomotor skill practice. Individuals used as assistant instructors should be knowledgeable in Airway management and the use of the dual lumen airway or Combitube.

Recommended Minimum Time to complete: An Additional 1 Hour should be devoted to didactic presentation

PRESENTATION

Declarative (What)

1. Pharyngeal and endotracheal tube molded into a single unit
2. Method
    a. Head - neutral position
    b. Pre-intubation precautions
    a. Insert with jaw-lift at midline
    b. Inflate pharyngeal cuff with 85 - 100 mL of air
    c. Inflate distal cuff with 10 - 15 mL of air
    d. Ventilate through longest tube first (pharyngeal)
        i. Chest rise indicates esophageal placement of distal tip
        ii. No chest rise indicates tracheal placement, switch ports and ventilate
3. Indications
    a. When prolonged artificial ventilation is required.

   b. When adequate artificial ventilation cannot be achieved by other methods.
   c. Clearly apneic patient.
   d. Unresponsive patients without cough or gag reflex.
4. Contraindications
   a. Responsive patients with an intact gag reflex.
   b. Patients with known esophageal disease.
   c. Patients who have ingested caustic substances.
   d. Patients under 4 feet tall (37 Fr Combitube).
   e. Patients under 5 feet tall (41 Fr Combitube).
   f. Dextrose or naloxone to be administered to the patient (precaution only)
5. Advantages
   a. Rapid insertion
   b. No special equipment
   c. Does not require sniffing position
   d. Prevents gastric distension.
   e. Minimizes risk of aspiration.
6. Disadvantages
   a. Impossible to suction trachea when tube is in esophagus
   b. Adults only
   c. Unconscious only
   d. Very difficult to intubate around
7. Special considerations
   a. Good assessment skills are essential to confirm proper placement
   b. Mis-identification of placement has been reported
   c. Reinforce multiple confirmation techniques
8. Procedure – Removal
   a. Turn the patient onto side.
   b. Deflate the proximal pharyngeal cuff (blue pilot balloon).
   c. Deflate the distal esophageal cuff (white pilot balloon).
   d. Remove the Combitube carefully, suctioning as needed.
   e. Insert an oropharyngeal or nasopharyngeal airway as needed.
   f. Continue ventilations with a BVM and oxygen at 10-15 LPM as needed.

<u>Procedural (How)</u>

1. Show charts of airways in adults with illustrations of esophageal and tracheal dual lumen/combitube placement.
2. Show anatomical models of adults demonstrating processes involved in dual lumen/combitube skills.
3. Demonstrate all basic skills of airway management.
4. Show all components of a dual lumen/combitube device used in advanced airway management.
5. Demonstrate techniques for selection and preparation of the dual lumen airway /combitube.
6. Demonstrate inline positioning of the patient's head.
7. Demonstrate tongue jaw lift to open airway for the dual lumen airway/combitube.

8. Demonstrate insertion of the dual lumen airway /combitube.
9. Demonstrate confirmation techniques.
10. Demonstrate methods of securing the tube.
11. Demonstrate methods of providing artificial ventilation with the dual lumen airway /combitube.
12. Demonstrate patient assessment techniques post-airway placement.
13. Demonstrate proper dual lumen airway /combitube removal.

Contextual (When, Where, Why)

Basic level EMTs have not been afforded the opportunity to properly manage the airway of patients for decades. It has long been recognized that the greatest need in patient care has been the need for better methods of managing and ultimately, controlling the airway.

All patients exhibiting respiratory distress should receive oxygen therapy. If the patient becomes unresponsive, begin with basic airway adjuncts and skills. If the patient is not breathing, placement of a dual lumen airway/combitube may be preferred.

STUDENT ACTIVITIES

Auditory (Hear)

1. The student should hear the associated sounds of dual lumen airway /combitube insertion.
2. The student should hear the sounds associated with the preparation of the dual lumen airway /combitube .
3. The student should hear lung sounds in the confirmation of the dual lumen airway /combitube.
4. The student should hear the sounds associated with securing a dual lumen airway /combitube.
5. The student should hear the sounds associated with removing a dual lumen airway /combitube.

Visual (See)

1. The student should see audio-visual aids or materials of the dual lumen airway /combitube
2. The student should see examples adult patients needing advanced airway management.
3. The student should see how to prepare the dual lumen airway /combitube.
4. The student should see how to prepare 100 mL and 15 mL syringes for cuff inflation.
5. The student should see how to check the tube and cuffs prior to insertion.
6. The student should see how to use a tongue jaw lift to open the airway.
7. The student should see how to insert the dual lumen airway /combitube.
8. The student should see how to confirm placement of the tube.
9. The student should see how to ventilate esophageal and tracheal placement.

10. The student should see how to secure the tube.
11. The student should see how to continue monitoring the patient with a dual lumen airway /combitube in place.

Kinesthetic (Do)

1. The student should practice preparing the dual lumen airway /combitube.
2. The student should practice preparing the 100 mL and 15 mL syringes for cuff inflation.
3. The student should practice checking the tube and cuffs.
4. The student should practice positioning the head midline for tube insertion.
5. The student should practice using a tongue jaw lift to open the airway.
6. The student should practice inserting the dual lumen airway /combitube.
7. The student should practice assessing for confirmation of tube placement.
8. The student should practice ventilating esophageal and tracheal placement
9. The student should practice securing the tube.

INSTRUCTOR ACTIVITIES

Supervise student practice.
Reinforce student progress in cognitive, affective, and psychomotor domains.
Redirect students having difficulty with content (complete remediation form).

EVALUATION

Written: Develop evaluation instruments, e.g., quizzes, verbal reviews, and handouts, to determine if the students have met the cognitive and affective objectives of this lesson.

Practical: Evaluate the actions of the EMT-Basic students during role play, practice or other skill stations to determine their compliance with the cognitive and affective objectives and their mastery of the psychomotor objectives of this lesson.

REMEDIATION

Identify students or groups of students who are having difficulty with this subject content.
Complete remediation sheet from the instructor's course guide.

ENRICHMENT

What is unique in the local area concerning this topic? Complete enrichment sheets from instructor's guide and attach with lesson plan.

OBJECTIVES

Objectives Legend
C = Cognitive P = Psychomotor A = Affective
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COGNITIVE OBJECTIVES

At the completion of this lesson, the EMT-Basic student will be able to:

- Demonstrate the cognitive objectives of Lesson 8-4: Advanced Airway Elective.

AFFECTIVE OBJECTIVES

At the completion of this lesson, the EMT-Basic student will be able to:

- Demonstrate the affective objectives of Lesson 8-4: Advanced Airway Elective.

PSYCHOMOTOR OBJECTIVES

At the completion of this lesson, the EMT-Basic student will be able to:

- Demonstrate the psychomotor objectives of Lesson 8-4: Advanced Airway Elective.

PREPARATION

Motivation: The practical lesson is designed to allow the students additional time to perfect skills. It is of utmost importance that the students demonstrate proficiency of the skill, cognitive knowledge of the steps to perform a skill, and a healthy attitude towards performing that skill on a patient.

This is an opportunity for the instructor and assistant instructors to praise progress and re-direct the students toward appropriate psychomotor skills. The material from all preceding lessons and basic life support should be incorporated into these practical skill sessions.

Prerequisites: EMT-B NSC 1994: BLS, Preparatory, Airway Lesson 2-1, and Advanced Airway Lesson 8-4

MATERIALS

AV Equipment: Typically none required.

EMS Equipment: Equipment from the list in Lesson 8-4.

PERSONNEL

Primary Instructor: One proctor for the written evaluation.

Assistant Instructor: The instructor-to-student ratio should be 1:6 for psychomotor skill practice. Individuals used as assistant instructors should be knowledgeable in basic and advanced airway procedures for adults, infants and children.

Recommended Minimum Time to complete: An additional 2 hours should be devoted to skills practice and evaluation. It is recommended that this skill be combined with scenarios throughout the course.

PRESENTATION

Procedural (How)

- Instructor should demonstrate the procedural activities from Lesson 8-4: Advanced Airway Elective.

Contextual (When, Where, Why)

- Instructor should review contextual information from Lesson 8-4: Advanced Airway Elective.

STUDENT ACTIVITIES

Auditory (Hear)

- The students should hear the auditory information from Lesson 8-4: Advanced Airway Elective.

Visual (See)

- The students should see the visual material from Lesson 8-4: Advanced Airway Elective.

Kinesthetic (Do)

- The students should practice the kinesthetic activities from Lesson 8-4: Advanced Airway Elective.

INSTRUCTOR ACTIVITIES

Supervise student practice.
Reinforce student progress in cognitive, affective, and psychomotor domains.
Redirect students having difficulty with content (complete remediation forms).

EVALUATION

Written: Develop evaluation instruments, e.g., quizzes, verbal reviews, and handouts, to determine if the students have met the cognitive and affective objectives of this lesson.

Practical: Evaluate the actions of the EMT-Basic students during role play, practice or other skill stations to determine their compliance with the cognitive and affective objectives and their mastery of the psychomotor objectives of this lesson.

REMEDIATION

Identify students or groups of students who are having difficulty with this subject content. Complete remediation sheet from the instructor's course guide.

ENRICHMENT

What is unique in the local area concerning this topic? Complete enrichment sheets from instructor's guide and attach with lesson plan.

COMBITUBE AIRWAY SKILL SHEET

Candidate: _____ Examiner: _____ Date: _____

Note: If candidate elects to initially ventilate with BVM attached to reservoir and oxygen, full credit must be awarded for steps denoted by "" so long as first ventilation is delivered within 30 seconds.**

Column A = Procedure Check List, Column B = Skills Evaluation

Desired Action or Procedure	Points	A	B
Takes or verbalizes body substance isolation procedures	**1**		
Checks for response	**1**		
Opens the airway manually	**1**		
Checks breathing *(Minimum 5 seconds; maximum 10 seconds)*	**1**		
Gives 2 breaths *(1 second each)*	**1**		
Checks carotid pulse *(Minimum 5 seconds; maximum 10 seconds)*	**1**		
Elevates tongue, inserts simple adjunct [oropharyngeal or nasopharyngeal airway]	**1**		
NOTE: Examiner informs candidate no gag reflex is present and patient accepts adjunct			
Attaches oxygen reservoir to bag-valve mask device and connects to high flow oxygen regulator	**1**		
Ventilates patient at a rate of 10-12/minute with appropriate volumes	**1**		
NOTE: After 30 seconds, examiner auscultates and reports breath sounds are present and equal bilaterally and insertion of the Combitube airway is indicated. The examiner must now take over ventilation.			
Directs assistant to preoxygenate patient	**1**		
Checks/prepares airway device	**1**		
Lubricates distal tip of the device [may be verbalized]	**1**		
NOTE: Examiner to remove OPA and move out of the way when candidate is prepared to insert device.			
Positions head properly	**1**		
Performs a tongue-jaw lift	**1**		
Inserts device in mid-line and to depth so printed ring is at level of teeth	**1**		
Inflates pharyngeal cuff with proper volume and removes syringe	**1**		
Inflates distal cuff with proper volume and removes syringe	**1**		
Attaches/directs attachment of BVM to the first [esophageal placement] lumen and ventilates	**1**		
Confirms placement and ventilation through correct lumen by observing chest rise, auscultation over the epigastrium, and bilaterally over each lung	**1**		
NOTE: Examiner states:"You do not see rise and fall of the chest and you only hear sounds over the epigastrium."			
Attaches/directs attachment of BVM to the second [endotracheal placement] lumen and ventilates	**1**		
Confirms placement and ventilation through correct lumen by observing chest rise, auscultation over the epigastrium, and bilaterally over each lung	**1**		
NOTE: Examiner confirms adequate chest rise, absent sounds over the epigastrium, and equal bilateral breath sounds.			
Secures device or confirms that the device remains properly secured.	**1**		
Ventilates patient at a rate of 8-10/minute with appropriate volumes.	**1**		
Passing Score: 18 points **Total:**	**23**		

_____ Failure to initiate ventilations within 30 seconds after taking BSI precautions or interrupts ventilations for greater than 30 seconds at any time.

_____ Failure to voice and ultimately provide high oxygen concentrations.

_____ Ventilates patient at a rate greater than 12 breaths per minute.

_____ Failure to provide adequate volumes per breath [maximum 2 errors/minute permissible].

_____ Failure to insert the dual lumen airway device at a proper depth or at either proper place within 3 attempts.

_____ Failure to inflate both cuffs properly.

_____ Failure to remove the syringe immediately after inflation of each cuff.

_____ Failure to confirm that the proper lumen of the device is being ventilated by observing chest rise, auscultation over the epigastrium, and bilaterally over each lung.

_____ Inserts any adjunct in a manner dangerous to patient.